IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

ALTERWAN, INC.,)
Plaintiff,)
v.) C.A. No. 19-1544 (MN)
AMAZON.COM, INC. and AMAZON WEB SERVICES, INC.,)
Defendants.)

MEMORANDUM ORDER

At Wilmington this 15th day of March 2021:

IT IS HEREBY ORDERED that the claim terms of U.S. Patent Nos. 7,111,163 ("the '163 patent"); 7,318,152 ("the '152 patent"); 8,595,478 ("the '478 patent"); 9,015,471 ("the '471 patent"); and 9,667,534 ("the '534 patent") with agreed-upon constructions are construed as follows (see D.I. 116 at 1-2):

- 1. "guarantee" means "guarantees" ('163 Patent, claim 7).
- 2. "wherein the data packets includes" means "wherein the data packets include" ('478 Patent, claim 5).
- 3. "designation" means "destination" ('478 Patent, claim 27 & 57).
- 4. "private tunnel" means "data path through the internet from the source firewall to the destination firewall through the predefined, low hop count, high bandwidth path" ('152 Patent, claim 18; '620 Patent, claims 1, 14 & 27).
- 5. "dedicated line" means "a line that must have sufficient bandwidth capacity to handle the worst case bandwidth consumption of the particular client facility it serves and must be dedicated and not dialup" ('471 Patent, claims 4 & 14; '478 Patent, claims 53 & 63).

Further, as announced at the hearing on February 5, 2021, IT IS HEREBY ORDERED that the disputed claim terms of the '163, '152, '478, '471, and '534 Patents are construed as follows:

- 1. "encapsulating" means "packaging into a packet" ('163 Patent, claim 7; '478 Patent, claim 31); "encapsulating" means "packaging into packets" ('478 Patent, claim 65; '534 Patent, claims 1 & 8); "encapsulate" means "package into a packet" ('478 Patent, claims 35 & 60; '471 Patent, claims 10 & 16); and "encapsulated" means "packaged into packets" ('534 Patent, claims 1).
- 2. "non-blocking bandwidth" means "bandwidth that will always be available and will always be sufficient" ('152 Patent, claims 1, 12, 15, 20 & 25; '471 Patent, claims 1 & 14).
- 3. "cooperating service provider" and "cooperating third party service provider" means "service provider that agrees to provide blocked bandwidth" ('478 Patent, claims 1, 6, 18, 51 & 63; '471 Patent, claim 2).
- 4. "minimized link cost" is corrected to read "minimum link cost" ('471 Patent, claim 7).

The parties briefed the issues (*see* D.I. 101) and submitted an appendix containing both intrinsic and extrinsic evidence, including expert declarations (*see* D.I. 116). AlterWAN provided a tutorial describing the relevant technology. (*See* D.I. 99). The Court carefully reviewed all submissions in connection with the parties' contentions regarding the disputed claim terms, heard oral argument and applied the following legal standards in reaching its decision:

I. <u>LEGAL STANDARDS</u>

A. <u>Claim Construction</u>

"[T]he ultimate question of the proper construction of the patent [is] a question of law," although subsidiary fact-finding is sometimes necessary. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 837-38 (2015). "[T]he words of a claim are generally given their ordinary and customary meaning [which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc) (internal citations and quotation marks omitted). Although "the claims themselves provide substantial guidance as to the meaning of particular claim terms," the context of the surrounding words of the

claim also must be considered. *Id.* at 1314. "[T]he ordinary meaning of a claim term is its meaning to the ordinary artisan after reading the entire patent." *Id.* at 1321 (internal quotation marks omitted).

The patent specification "is always highly relevant to the claim construction analysis . . . [as] it is the single best guide to the meaning of a disputed term." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). It is also possible that "the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs." *Phillips*, 415 F.3d at 1316. "Even when the specification describes only a single embodiment, [however,] the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction." *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014) (internal quotation marks omitted) (quoting *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004)).

In addition to the specification, a court "should also consider the patent's prosecution history, if it is in evidence." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). The prosecution history, which is "intrinsic evidence, . . . consists of the complete record of the proceedings before the PTO [Patent and Trademark Office] and includes the prior art cited during the examination of the patent." *Phillips*, 415 F.3d at 1317. "[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id*.

In some cases, courts "will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period." Teva, 135 S. Ct. at 841. Extrinsic evidence "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." Markman, 52 F.3d at 980. Expert testimony can be useful "to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field." Phillips, 415 F.3d at 1318. Nonetheless, courts must not lose sight of the fact that "expert reports and testimony [are] generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence." *Id.* Overall, although extrinsic evidence "may be useful to the court," it is "less reliable" than intrinsic evidence, and its consideration "is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence." *Id.* at 1318-19. Where the intrinsic record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper. See Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1308 (Fed. Cir. 1999) (citing Vitronics, 90 F.3d at 1583).

B. Indefiniteness

Section 112 of the Patent Act requires a patent applicant to "particularly point out and distinctly claim the subject matter" regarded as the applicant's invention. 35 U.S.C. § 112 ¶ 2. "The primary purpose of the definiteness requirement is to ensure that the claims are written in such a way that they give notice to the public of the extent of the legal protection afforded by the patent, so that interested members of the public, e.g. competitors of the patent owner, can determine whether or not they infringe." *All Dental Prodx, LLC v. Advantage Dental Prods., Inc.*,

309 F.3d 774, 779-80 (Fed. Cir. 2002) (citing *Warner-Jenkinson Co. v. Hilton-Davis Chem. Co.*, 520 U.S. 17, 28-29 (1997)). Put another way, "[a] patent holder should know what he owns, and the public should know what he does not." *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 731 (2002).

A patent claim is indefinite if, "viewed in light of the specification and prosecution history, [it fails to] inform those skilled in the art about the scope of the invention with reasonable certainty." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129 (2014). A claim may be indefinite if the patent does not convey with reasonable certainty how to measure a claimed feature. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1341 (Fed. Cir. 2015). But "[i]f such an understanding of how to measure the claimed [feature] was within the scope of knowledge possessed by one of ordinary skill in the art, there is no requirement for the specification to identify a particular measurement technique." *Ethicon Endo–Surgery, Inc. v. Covidien, Inc.*, 796 F.3d 1312, 1319 (Fed. Cir. 2015).

Like claim construction, definiteness is a question of law, but the Court must sometimes render factual findings based on extrinsic evidence to resolve the ultimate issue of definiteness. *See, e.g., Sonix Tech. Co. v. Publications Int'l, Ltd.*, 844 F.3d 1370, 1376 (Fed. Cir. 2017); *see also Teva*, 135 S. Ct. at 842-43. "Any fact critical to a holding on indefiniteness . . . must be proven by the challenger by clear and convincing evidence." *Intel Corp. v. VIA Techs., Inc.*, 319 F.3d 1357, 1366 (Fed. Cir. 2003); *see also Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1338 (Fed. Cir. 2008).

II. THE COURT'S RULING

The Court's rulings regarding the disputed claim terms of the '163, '152, '478, '471, and '534 Patents were announced from the bench at the conclusion of the hearing as follows:

 \dots At issue we have six patents and six disputed terms or phrases.^[1]

I am prepared to rule on five of those disputes. I will not be issuing a written opinion, but I will issue an order stating my rulings and will construe the remaining term in my order or at another time. I want to emphasize before I announce my decisions that although I am not issuing a written opinion, we have followed a full and thorough process before making the decisions I am about to state. I have reviewed the patents in dispute. I have also reviewed the other materials in the Joint Appendix, which include portions of the prosecution history and paper submitted in an IPR, expert declarations, definitions, and other patents and articles. There was full briefing on each of the disputed terms. There was also a tutorial on the technology submitted by AlterWAN. And there has been argument here today. All of that has been carefully considered.

As an initial matter, I am not going to read into the record my understanding of claim construction law and indefiniteness generally. I have a legal standard section that I have included in earlier opinions, including in *Quest Diagnostics Investments LLC v. Laboratory Corporation of America Holdings*, Civil Action No. 18-1436. I incorporate that law and adopt it into my ruling today and will also set it out in the order that I issue.

Now to my rulings. The first term three similar words "encapsulating,"^[2] "encapsulate,"^[3] and "encapsulated."^[4] Plaintiff proposes varying versions of "packaging into a packet" or packets. Defendants proposes plain meaning.

Here the parties agree that there is no express definition in the intrinsic evidence and instead that the patents use the term in accordance with its ordinary meaning. The parties also agree that encapsulating means "packaging into a packet." The dispute is about the type of data that is packaged into the packets. Amazon argues that the only type of data that can be packaged into a packet

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The patents are U.S. Patent Nos. 7,111,163; 7,318,152; 8,595,478; 9,015,471; 9,525,620 and 9,667,534. The patents all share the same specification.

² "Encapsulating" in claim 7 of the '163 Patent, claims 31 and 65 of the '478 Patent and claims 1 and 8 of the '534 Patent.

³ "Encapsulate" is in claims 35 and 60 of the '478 Patent and claims 10 and 16 of the '471 Patent.

⁴ "Encapsulated" is in claim 1 of the '534 Patent.

is another packet, whereas AlterWAN argues that my construction need not specify the type of data because the claims already do that –sometimes specifying that it's a "packet"^[5] and sometimes specifying that it is "traffic."^[6]

Here, I will agree with Plaintiff and construe the term to mean "packaging into a packet." This is consistent with the ordinary meaning of the term acknowledged by both sides. [7] I see no need to read in the additional limitations that the data be a packet. First, it seems like most of the claims already expressly require that and to add in that limitation is unnecessary and redundant. And second, there are two claims that refer to encapsulating traffic. I understand that Defendants say that traffic in those claims means packets but no one has asked me to construe traffic. And I suppose if there comes to be an issue on that, we'll have to figure out what to do at that point.

The second term is "non-blocking bandwidth" in claims 1, 12, 15, 20 and 25 of the '152 Patent and claims 1 and 14 of the '471 Patent. Plaintiff proposes that no construction is necessary or alternatively "bandwidth that will always be available and will always be sufficient while the network is operational." Defendants propose "bandwidth that will always be available and will always be sufficient."

The crux of the dispute is Plaintiff's addition of the words "while the network is operational."

Here, I agree with Defendants and will construe the term to mean "bandwidth that will always be available and will always be sufficient."

There is no real dispute that the patents define non-blocking bandwidth. The '163 Patent, at column 4, lines 62 through 66, states:

[T]he quality of service problem that has plagued prior attempts is solved by providing non-blocking

⁵ See, e.g., '478 Patent cls. 31, 35, and 60; '163 Patent cl. 7; and '534 Patent, cl 1. .

⁶ See, e.g., '478 Patent, cl. 65; '471 Patent, cl. 16

See also Tom Sheldon, *Encyclopedia of Networking* 344 (McGraw-Hill, elec. ed. 1998) ("Encapsulation is a method of packaging information into packets.") (D.I. 102-9).

bandwidth (bandwidth that will always be available and will always be sufficient).^[8]

Nevertheless, AlterWAN asks the Court to add the phrase "when the network is operational" to address threats of *force majeure*. But the specification never discusses the issue of *force majeure* or the possibility that the network will not be operational.

Moreover, none of AlterWAN's cited cases support modifying the definition in the asserted patents. [9] Courts must "construe the claim as written, not as the patentees wish they had written it." [10] When a patentee "expressly acted as its own lexicographer by providing a definition of [a term] in the specification, the definition in the specification controls the meaning of [the term]." [11]

The third dispute is over the terms "cooperating service provider" and "cooperating third-party service provider" in claims 1, 6, 18, 51 and 63 of the '478 Patent and claim 2 of the '471 Patent. Plaintiff asserts that no construction is necessary or if one is necessary, then "service provider [or third-party service provider] whose transmission equipment is coupled to the path." Defendants propose the construction "service provider that agrees to provide non-blocking bandwidth." I am not prepared to construe this term today.

⁸ ISX and ISP means internet service provider. ('163 Patent at 6:28).

In *Ecolab, Inc. v. FMC Corp.*, the patent defined the term "sanitize" as "a bacterial population reduction to a level that is safe for human handling and consumption." 569 F.3d 1335, 1345 (Fed. Cir. 2009). The court found the definition to be ambiguous, because it was unclear when consumption of the chicken occurred (before or after cooking) and, therefore, added after cooking to the definition. Id. There is no similar ambiguity in the definition of "non-blocking bandwidth." Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc. is distinguishable because, unlike here, it did not have an express definition in the specification. 904 F.3d 965, 972 (Fed. Cir. 2018). Finally, Bayer Intellectual Prop. GmbH v. Taro Pharm. Indus. Ltd. is distinguishable because the intrinsic record in that case discussed and contemplated the modified construction the court adopted, unlike here. 2019 WL 1466193, at *5 (D. Del. Apr. 2, 2019).

¹⁰ Chef Am., Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1374 (Fed. Cir. 2004).

³M Innovative Props. Co. v. Avery Dennison Corp., 350 F.3d 1365, 1374 (Fed. Cir. 2003).

The fourth term is again over multiple yet similar terms: "priority routing,"^[12] "prioritized traffic"^[13] and "priority traffic."^[14] Plaintiff asserts that no construction is needed and Defendants assert that the terms are indefinite under 35 U.S.C. § 112.

It appears that Plaintiff's argument is that the claim language itself defines the terms. I agree with Plaintiff that to some extent that may be true, for example, in claim 1 of the '478 Patent and claims 12, 20 and 21 of the '471 Patent. But for the other claims it is not as clear to me.

That being said, however, for a claim to be held invalid for indefiniteness, there must be clear and convincing evidence.^[15] On the current record, Defendants have not met their burden to show that these terms are indefinite. I am not yet ready to conclude that all of these claims are definite. Should there still be a disagreement regarding these claim terms in the future, Defendants may raise the issue later, if appropriate, after full fact and expert discovery.

The fifth term is "a shortest distance criteria" in claims 63 and 64 of the '478 Patent. Plaintiff proposes the construction "a shortest distance criterion" (singular) and Defendants again assert indefiniteness under 35 U.S.C. § 112.

Initially, AlterWAN asks the Court to correct the term "shortest distance criteria" in claims 63 and 64 of the '478 Patent to "shortest distance criterion," – changing the plural "criteria" to the singular "criterion."

A district court may correct an error in a patent "if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims." [16] Thus, a court normally considers the claim language, the

This term is in claim 1 of the '478 Patent.

This term is in claim 63 of the '478 Patent.

¹⁴ This term is in claims 12, 14, 16, 20 & 21 of the '471 Patent.

See Nautilus, Inc. v. Biosig Instruments, Inc., 572 U.S. 898, 912 n. 10 (citing Microsoft Corp. v. i4i Ltd. P'ship, 564 U.S. 91, 95 (2011)).

Ultimax Cement Mfg. Corp. v. CTS Cement Mfg. Corp., 587 F.3d 1339, 1353 (Fed. Cir. 2009).

specification, and the prosecution history in deciding whether to make the correction. But here, I have only the claim language to consider. The specification does not mention "criterion," "criteria," or "shortest distance criteria," let alone discuss what the term means. The term was added to the claims more than 11 years after the specification was filed. The prosecution history likewise does not discuss "criterion," "criteria," or "shortest distance criteria" in a meaningful way.

AlterWAN contends that the claim language supports a correction because the plural term "criteria" is preceded by the singular "a" in claim 63 and "the" in claim 64. In addition, the term is followed by the singular "is" in claim 64. But the word "a" in patents typically means one or more unless it is clear that it means only one.^[17]

In short, I am not at this point on the record before me prepared to conclude that correction is not subject to reasonable debate given that I only have ambiguous claim language and nothing to review in the specification or the prosecution history.

For a claim to be held invalid for indefiniteness, however, as I said, there must be clear and convincing evidence. Here, again, I conclude that Defendants have not met their burden to show that this term is indefinite. And again, should there still be a disagreement regarding these claim terms in the future, Defendants may raise the issue later, if appropriate.

The final dispute is over "minimized link cost"^[18] and "minimum link cost."^[19] Plaintiff alleges that as used in the '478 Patent, "minimized link cost" needs no construction or alternatively means "lowest transmission path parameter." And that the term in claim 7 of the '471 Patent means "minimum link cost" which is the term used in the other claims of that patent. And Plaintiff asserts that no construction is necessary for "minimum link cost" or that if the Court requires a construction, it should be "lowest transmission path parameter." Defendants again assert indefiniteness under 35 U.S.C. § 112.

SanDisk Corp. v. Kingston Tech. Co., 695 F.3d 1348, 1360 (Fed. Cir. 2012) ("[T]he use of the indefinite articles 'a' or 'an' means 'one or more.").

¹⁸ '478 Patent, claims 18, 26, 27, 51, 55, 56 & 57; '471 Patent, claim 7.

¹⁹ '471 Patent, claims 1, 3, 6, 14, 15 & 20.

First, as to claim 7, AlterWAN asks the Court to correct the term "minimized link cost" to "minimum link cost." Claim 7 depends from claim 1 and states in its entirety "The apparatus of claim 1, wherein the **minimized link cost** comprises the shortest possible path." But claim 1 uses the phrase "minimum link cost," not "minimized link cost." Thus, the purpose of the correction is to conform the term "the minimized link cost" in dependent claim 7 to its antecedent basis "minimum link cost" in independent claim 1.

Amazon in the briefing did not challenge AlterWAN's position that "minimized link cost" in claim 7 of the '471 Patent should be corrected to read "minimum link cost." And it's clear from the claim language that claim 7 should read minimum link cost. The correction is not the subject of reasonable debate. And I will make it.

As to definiteness, I understand Defendants' concerns about the subjectiveness of the terms and may even agree, but I am not going to conclude that Defendants have met their burden on the record before me. As with the other terms, should there still be a disagreement regarding these claim terms, Defendants may raise the issue later, if appropriate, after full fact and expert discovery.

As noted, the Court did not construe at the hearing the disputed term "cooperating service provider" in the '478 Patent, claims 1, 6, 18, 51 and 63 and "cooperating third party service provider" in the '471 Patent, claim 2. Plaintiff proposes that no construction is necessary or alternatively "service provider whose transmission equipment is coupled to the path." Defendants propose "service provider that agrees to provide nonblocking bandwidth."

Both parties cite intrinsic evidence in support of their construction. Thus, the crux of the dispute is whose construction is better supported by the intrinsic evidence. Notably, however, there is very little intrinsic evidence regarding the term "cooperating service provider." Each of the six patents asserted in this action is a continuation of a previous patent, starting with the '163 patent filed in the year 2000. All of the patents share a common specification which does not

²⁰ '471 patent at 16:22-23.

Id. at 15:61-62.

mention the term "cooperating" or "cooperating service provider." The prosecution history for the '163 patent also does not mention the term "cooperating" or "cooperating service provider." The disputed term "cooperating service provider" first appears in the claim language of '478 and '471 patents, which were filed in 2007 and 2013, respectively.

Plaintiff argues that its construction is taken from the claim language: Each of the six claims in the '478 and '471 patents that use the term "cooperating service provider" also refer to equipment coupled to the path on which the data is traveling. *See*, *e.g.*, '478 Pat., cl. 6 (". . . defining a route set consisting of one or more data paths that connect to a cooperating service provider"); '471 Pat., cl. 1 (". . . the set of transmission paths is limited to paths that include at least a path segment connecting a cooperating third party service provider").

Plaintiff's construction based on the claim language is undercut, however, by the prosecution history which shows that the term "cooperating service provider" is limited to a certain subset of providers and does not extend to every provider with equipment coupled to the path. To distinguish the claims of the '478 patent over the prior art, Plaintiff amended the claims to add the phrase "cooperating service provider," and explained that "an internet router can route normal traffic using a hop based method but identifies and segregates *prioritized* traffic (e.g., corresponding to a premium service) and *routes this traffic to a cooperating service provider*." (D.I. 102-21 at 13). For prioritized traffic to be segregated and routed *to* a cooperating service provider, it must also be routed *away from* a non-cooperating service provider. Thus, not all providers with equipment coupled to the path can be a cooperating service provider. For this reason, the Court will not adopt Plaintiff's proposed construction.

Defendants' proposed construction is taken from a discussion of "cooperating service provider" in the prosecution history of the '478 patent, which arises in a context where Plaintiff is

attempting to distinguish the prior art referred to as "Roberts." There, Plaintiff stated that in Roberts, "if multiple acceptable paths exist for a given microflow, then any of them can be selected." (D.I. 102-14 at 20). But in the invention of the '478 patent, if multiple acceptable paths exist, then one specific route is selected from among the multiple paths based on a "minimal link cost," such as hop count. (*Id.*). Plaintiff further explained:

> In the context of Applicant's disclosure, cooperating service providers may be separated by multiple path connections, which is to say, there may be a choice between routes having acceptable bandwidth correspond to paths between cooperating service providers that have prearranged for blocked bandwidth, and this choice can be resolved according to link cost.

(*Id*.).

Thus, the prosecution history states that "cooperating services providers . . . have prearranged for blocked bandwidth." (Id.). Based on that statement, Defendants ask the Court to construe "cooperating service provider" as "service provider that agrees to provide nonblocking bandwidth." In other words, Defendants ask the Court change "blocked bandwidth" in the prosecution history to "non-blocking bandwidth." (D.I. 101 at 38). The parties disagree whether "blocked bandwidth" has the same meaning as "non-blocking bandwidth." (Id. at 38-43). At the same time, the parties have not asked the Court to construe the term "blocked bandwidth." Accordingly, the Court cannot resolve that dispute at this time. The Court construes the disputed terms "cooperating service provider" and "cooperating third party service provider" as "service provider that agrees to provide blocked bandwidth." Should a dispute based on the meaning of "blocked bandwidth" later arise, the parties may raise it to the extent necessary.

Honorable Maryellen Noreika

United States District Judge